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NPS Student Examines Changing Arctic's Impact on Acoustics

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Today@NPS



U.S. Navy photo by Javier Chagoya

NPS Student Examines Changing Arctic's Impact on Acoustics

By Javier Chagoya

NPS Department of Oceanography doctoral student Lt. Cmdr. Dominic DiMaggio and Research Assistant Professor John Joseph will soon participate in the Navy's bi-annual Ice Exercise 2016 (ICEX) at a mobilized ice camp laboratory on the Arctic Ocean in March of next year. The two NPS researchers will have 12 days to deploy instrumentation and collect vital acoustical data while on the ice floe.

"The Arctic Ocean has been undergoing significant changes with respect to sea ice coverage and ocean properties, like temperature and salinity. There are a number of potential consequences to these changes, and a great deal of uncertainty," said DiMaggio. "What we are trying to understand is how these oceanographic changes are affecting acoustic conditions."

The Navy's Arctic Roadmap requires the service to be fully mission-capable in the Arctic, even though there have been operating submarines in the region for decades. But with significant changes to the Arctic environment, DiMaggio's project seeks to compare and validate earlier data with his own on this next trip to the ice in an effort to understand how these changes impact acoustics.

"Underwater sound is vitally important to undersea warfare, so naturally the Navy is curious to know how these acoustic conditions are changing. The experiment we designed for ICEX aims to directly observe ocean and acoustic conditions as they are now. We can compare these data to the historical conditions from several decades ago, when conditions were different," explained DiMaggio.

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